

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference MIC-82-PCT	FOR FURTHER ACTION <div style="display: flex; justify-content: space-between; font-size: small;"> see Form PCT/ISA/220 as well as, where applicable, item 5 below. </div>	
International application No. PCT/US04/16338	International filing date (<i>day/month/year</i>) 25 May 2004 (25.05.2004)	(Earliest) Priority Date (<i>day/month/year</i>) 30 May 2003 (30.05.2003)
Applicant MICHELIN NORTH AMERICA, INC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).



- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II)

3. ☐ Unity of invention is lacking (See Box No. III)

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. 3



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

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Box IV TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8.1(d)).

NEW ABSTRACT

Apparatus and methods are provided for flash drying liquid materials using a variable die (110). A die or filter screen (240) and die body (200) are provided with an adjustably configured pressure regulating variable obstruction in the form of opposing conical surfaces (204 and 244) that allows control of the temperature of the material as it enters the die (240). Optimizing pressure and temperature allows optimization of the flash drying process.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/16338

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B29C 047/12, 47/30

US CL : 425/191; 34/386, 387, 398; 159/2.2, 47.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 425/191; 34/386, 387, 398; 159/2.2, 47.1, 2.3

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3,225,453 A (BURNER) 28 December 1965 (28.12.1965), see figures 3 and 4; column 1, lines 23-34; column 2, lines 48-52; column 3, lines 16-29; column 8, lines 4-23 and column 10, lines 29-43.	1-7, 9, 11-16, 18, 20-24
X	US 6,025,004 A (SPECK et al) 15 February 2000 (15.02.2000), see figure 6 and column 9, line 12 to column 10, line 44.	1-4, 7, 8, 20-24
A	US 3,766,848 A (FRENCH et al) 23 October 1973 (23.10.1973), see figure 1.	1-18, 20-24
A	US 3,834,440 A (MCCRACKEN) 10 September 1974 (10.09.1974), see figure 1.	1-18, 20-24
A	US 3,067,462 A (KULLGREN) 11 December 1962 (11.12.1962), see figure 1 and column 4, lines 15-28.	20
A	US 3,230,865 A (HIBBEL et al) 25 January 1966 (25.01.1966), see figures 1-2.	1-18, 20-24
A	US 3,672,641 A (SLABY) 27 June 1972 (27.06.1972), see figure 1.	1-18, 20-24

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

01 April 2005 (01.04.2005)

Date of mailing of the international search report

14 APR 2005

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Robert B. Davis

Telephone No. 571-272-0989